RAW SEQUENCE LISTING

The Biotechnology Systems Branch of the Scientific and Technical Information Center (STIC) no errors detected.

Application Serial Number: 10/796,719A
Source: IFW16
Date Processed by STIC: 1-22-07

ENTERED

CRF Errors Edited by the STIC Systems Branch

Serial Number: 10/796,719A CRF Edit Date: 1-22-07
Edited by: JCE

___ Realigned nucleic acid/amino acid numbers/text in cases where the sequence text "wrapped" to the next line

___ Corrected the SEQ ID NO. Sequence numbers edited were:

_____

___ Inserted or corrected a nucleic number at the end of a nucleic line. SEQ ID NO's edited:

_____

___ Deleted: ___ invalid beginning/end-of-file text ; ___ page numbers

___ Inserted mandatory headings/numeric identifiers, specifically:

_____

___ Moved responses to same line as heading/numeric identifier, specifically:

_____

✓ Other: inserted a amino acid number / corrected numbering in Seq ID #144.

Revised 09/09/2003

IFW16

RAW SEQUENCE LISTING DATE: 01/22/2007
PATENT APPLICATION: US/10/796,719A TIME: 12:29:21

Input Set : A:\pto.kd.txt
Output Set: N:\CRF4\01222007\J796719A.raw

(pg. 6)

<110> APPLICANT: Currie, Mark G.
Mahajan-Miklos, Shalina
<120> TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR THE TREATMENT OF GASTROINTESTINAL DISORDERS
<130> FILE REFERENCE: 14184-043001
<140> CURRENT APPLICATION NUMBER: US 10/796,719A
<141> CURRENT FILING DATE: 2004-03-09
<150> PRIOR APPLICATION NUMBER: US 10/766,735
<151> PRIOR FILING DATE: 2004-01-28
<150> PRIOR APPLICATION NUMBER: US 60/443,098
<151> PRIOR FILING DATE: 2003-01-28
<150> PRIOR APPLICATION NUMBER: US 60/471,288
<151> PRIOR FILING DATE: 2003-05-15
<150> PRIOR APPLICATION NUMBER: US 60/519,460
<151> PRIOR FILING DATE: 2003-11-12
<160> NUMBER OF SEQ ID NOS: 149
<170> SOFTWARE: FastSEQ for Windows Version 4.0
<210> SEQ ID NO: 1
<211> LENGTH: 19
<212> TYPE: PRT
<213> ORGANISM: Escherichia coli
<400> SEQUENCE: 1

```
Asn Ser Ser Asn Tyr Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Thr
 1               5                  10                  15
Gly Cys Tyr
```

<210> SEQ ID NO: 2
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Escherichia coli
<400> SEQUENCE: 2

```
Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Ala Gly
 1               5                  10                  15
Cys Tyr
```

<210> SEQ ID NO: 3
<211> LENGTH: 18
<212> TYPE: PRT
<213> ORGANISM: Escherichia coli
<400> SEQUENCE: 3

```
Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Tyr Pro Ala Cys Ala Gly
 1               5                  10                  15
Cys Asn
```

<210> SEQ ID NO: 4
<211> LENGTH: 18

RAW SEQUENCE LISTING DATE: 01/22/2007
PATENT APPLICATION: US/10/796,719A TIME: 12:29:21

Input Set : A:\pto.kd.txt
Output Set: N:\CRF4\01222007\J796719A.raw

```
68 <212> TYPE: PRT
69 <213> ORGANISM: Citrobacter freundii
71 <400> SEQUENCE: 4
72 Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Ala Gly
73  1               5                  10                  15
74 Cys Tyr
77 <210> SEQ ID NO: 5
78 <211> LENGTH: 30
79 <212> TYPE: PRT
80 <213> ORGANISM: Yersinia enterocolitica
82 <400> SEQUENCE: 5
83 Gln Ala Cys Asp Pro Pro Ser Pro Pro Ala Glu Val Ser Ser Asp Trp
84  1               5                  10                  15
85 Asp Cys Cys Asp Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
86             20                  25                  30
88 <210> SEQ ID NO: 6
89 <211> LENGTH: 30
90 <212> TYPE: PRT
91 <213> ORGANISM: Yersinia enterocolitica
93 <400> SEQUENCE: 6
94 Lys Ala Cys Asp Thr Gln Thr Pro Ser Pro Ser Glu Glu Asn Asp Asp
95  1               5                  10                  15
96 Trp Cys Cys Glu Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
97             20                  25                  30
99 <210> SEQ ID NO: 7
100 <211> LENGTH: 53
101 <212> TYPE: PRT
102 <213> ORGANISM: Yersinia enterocolitica
104 <400> SEQUENCE: 7
105 Gln Glu Thr Ala Ser Gly Gln Val Gly Asp Val Ser Ser Ser Thr Ile
106  1               5                  10                  15
107 Ala Thr Glu Val Ser Glu Ala Glu Cys Gly Thr Gln Ser Ala Thr Thr
108             20                  25                  30
109 Gln Gly Glu Asn Asp Trp Asp Trp Cys Cys Glu Leu Cys Cys Asn Pro
110         35                  40                  45
111 Ala Cys Phe Gly Cys
112     50
114 <210> SEQ ID NO: 8
115 <211> LENGTH: 16
116 <212> TYPE: PRT
117 <213> ORGANISM: Yersinia kristensenii
119 <400> SEQUENCE: 8
120 Ser Asp Trp Cys Cys Glu Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
121  1               5                  10                  15
123 <210> SEQ ID NO: 9
124 <211> LENGTH: 17
125 <212> TYPE: PRT
126 <213> ORGANISM: Vibrio cholerae
128 <400> SEQUENCE: 9
```

RAW SEQUENCE LISTING DATE: 01/22/2007
PATENT APPLICATION: US/10/796,719A TIME: 12:29:21

Input Set : A:\pto.kd.txt
Output Set: N:\CRF4\01222007\J796719A.raw

```
129 Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly Cys Leu
130  1               5                  10                  15
131 Asn
134 <210> SEQ ID NO: 10
135 <211> LENGTH: 17
136 <212> TYPE: PRT
137 <213> ORGANISM: Vibrio mimicus
139 <400> SEQUENCE: 10
140 Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly Cys Leu
141  1               5                  10                  15
142 Asn
145 <210> SEQ ID NO: 11
146 <211> LENGTH: 18
147 <212> TYPE: PRT
148 <213> ORGANISM: Escherichia coli
150 <400> SEQUENCE: 11
151 Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Ala Pro
152  1               5                  10                  15
153 Cys Tyr
156 <210> SEQ ID NO: 12
157 <211> LENGTH: 13
158 <212> TYPE: PRT
159 <213> ORGANISM: Vibrio cholerae
161 <400> SEQUENCE: 12
162 Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe
163  1               5                  10
165 <210> SEQ ID NO: 13
166 <211> LENGTH: 14
167 <212> TYPE: PRT
168 <213> ORGANISM: Vibrio cholerae
170 <400> SEQUENCE: 13
171 Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly
172  1               5                  10
174 <210> SEQ ID NO: 14
175 <211> LENGTH: 17
176 <212> TYPE: PRT
177 <213> ORGANISM: Vibrio mimicus
179 <400> SEQUENCE: 14
180 Ile Asp Cys Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly Cys Leu
181  1               5                  10                  15
182 Asn
185 <210> SEQ ID NO: 15
186 <211> LENGTH: 17
187 <212> TYPE: PRT
188 <213> ORGANISM: Vibrio mimicus
190 <400> SEQUENCE: 15
191 Ile Asp Arg Cys Glu Ile Cys Cys Asn Pro Ala Cys Phe Gly Cys Leu
192  1               5                  10                  15
193 Asn
```

RAW SEQUENCE LISTING DATE: 01/22/2007
PATENT APPLICATION: US/10/796,719A TIME: 12:29:21

Input Set : A:\pto.kd.txt
Output Set: N:\CRF4\01222007\J796719A.raw

<210> SEQ ID NO: 16
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Yersinia enterocolitica
<400> SEQUENCE: 16
Asp Trp Asp Cys Cys Asp Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
1 5 10 15
<210> SEQ ID NO: 17
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Yersinia enterocolitica
<400> SEQUENCE: 17
Asp Trp Asp Cys Cys Asp Val Cys Cys Asn Pro Ala Cys Ala Gly Cys
1 5 10 15
<210> SEQ ID NO: 18
<211> LENGTH: 17
<212> TYPE: PRT
<213> ORGANISM: Yersinia enterocolitica
<400> SEQUENCE: 18
Asn Asp Asp Trp Cys Cys Glu Val Cys Cys Asn Pro Ala Cys Ala Gly
1 5 10 15
Cys
<210> SEQ ID NO: 19
<211> LENGTH: 16
<212> TYPE: PRT
<213> ORGANISM: Yersinia enterocolitica
<400> SEQUENCE: 19
Trp Asp Trp Cys Cys Glu Leu Cys Cys Asn Pro Ala Cys Phe Gly Cys
1 5 10 15
<210> SEQ ID NO: 20
<211> LENGTH: 72
<212> TYPE: PRT
<213> ORGANISM: Escherichia coli
<400> SEQUENCE: 20
Met Lys Lys Leu Met Leu Ala Ile Phe Ile Ser Val Leu Ser Phe Pro
1 5 10 15
Ser Phe Ser Gln Ser Thr Glu Ser Leu Asp Ser Ser Lys Glu Lys Ile
20 25 30
Thr Leu Glu Thr Lys Lys Cys Asp Val Val Lys Asn Asn Ser Glu Lys
35 40 45
Lys Ser Glu Asn Met Asn Asn Thr Phe Tyr Cys Cys Glu Leu Cys Cys
50 55 60
Asn Pro Ala Cys Ala Gly Cys Tyr
65 70
<210> SEQ ID NO: 21
<211> LENGTH: 72
<212> TYPE: PRT
<213> ORGANISM: Escherichia coli
<400> SEQUENCE: 21

RAW SEQUENCE LISTING DATE: 01/22/2007
PATENT APPLICATION: US/10/796,719A TIME: 12:29:21

Input Set : A:\pto.kd.txt
Output Set: N:\CRF4\01222007\J796719A.raw

```
257 Met Lys Lys Ser Ile Leu Phe Ile Phe Leu Ser Val Leu Ser Phe Ser
258  1               5                  10                  15
259 Pro Phe Ala Gln Asp Ala Lys Pro Val Glu Ser Ser Lys Glu Lys Ile
260             20                  25                  30
261 Thr Leu Glu Ser Lys Lys Cys Asn Ile Ala Lys Lys Ser Asn Lys Ser
262         35                  40                  45
263 Gly Pro Glu Ser Met Asn Ser Ser Asn Tyr Cys Cys Glu Leu Cys Cys
264     50                  55                  60
265 Asn Pro Ala Cys Thr Gly Cys Tyr
266 65                  70
268 <210> SEQ ID NO: 22
269 <211> LENGTH: 71
270 <212> TYPE: PRT
271 <213> ORGANISM: Yersinia enterocolitica
273 <400> SEQUENCE: 22
274 Met Lys Lys Ile Val Phe Val Leu Val Leu Met Leu Ser Ser Phe Gly
275  1               5                  10                  15
276 Ala Phe Gly Gln Glu Thr Val Ser Gly Gln Phe Ser Asp Ala Leu Ser
277             20                  25                  30
278 Thr Pro Ile Thr Ala Glu Val Tyr Lys Gln Ala Cys Asp Pro Pro Leu
279         35                  40                  45
280 Pro Pro Ala Glu Val Ser Ser Asp Trp Asp Cys Cys Asp Val Cys Cys
281     50                  55                  60
282 Asn Pro Ala Cys Ala Gly Cys
283 65                  70
285 <210> SEQ ID NO: 23
286 <211> LENGTH: 54
287 <212> TYPE: PRT
288 <213> ORGANISM: Artificial Sequence
290 <220> FEATURE:
291 <223> OTHER INFORMATION: Synthetically generated amino terminal leader
292       sequence
294 <400> SEQUENCE: 23
295 Met Lys Lys Ser Ile Leu Phe Ile Phe Leu Ser Val Leu Ser Phe Ser
296  1               5                  10                  15
297 Pro Phe Ala Gln Asp Ala Lys Pro Val Glu Ser Ser Lys Glu Lys Ile
298             20                  25                  30
299 Thr Leu Glu Ser Lys Lys Cys Asn Ile Ala Lys Lys Ser Asn Lys Ser
300         35                  40                  45
301 Gly Pro Glu Ser Met Asn
302     50
304 <210> SEQ ID NO: 24
305 <211> LENGTH: 53
306 <212> TYPE: PRT
307 <213> ORGANISM: Artificial Sequence
309 <220> FEATURE:
310 <223> OTHER INFORMATION: Synthetically generated peptide
312 <400> SEQUENCE: 24
313 Met Lys Lys Ser Ile Leu Phe Ile Phe Leu Ser Val Leu Ser Phe Ser
```

RAW SEQUENCE LISTING ERROR SUMMARY DATE: 01/22/2007
PATENT APPLICATION: **US/10/796,719A** TIME: 12:29:22

Input Set : **A:\pto.kd.txt**
Output Set: **N:\CRF4\01222007\J796719A.raw**

Please Note:
Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:66; Xaa Pos. 1,2,3,4,5,9,20,21
Seq#:119; Xaa Pos. 1,2,3,4,5,8,9,12,13,14,16,17,19,20,21
Seq#:120; Xaa Pos. 1,2,3,4,5,8,9,16,19,20,21
Seq#:144; Xaa Pos. 1,2,3,4,5,8,9,12,13,14,16,17,19,20,21
Seq#:145; Xaa Pos. 1,2,3,4,5,8,9,12,13,14,16,17,19,20,21
Seq#:146; Xaa Pos. 1,2,3,4,5,8,9,12,13,14,16,17,19,20,21
Seq#:147; Xaa Pos. 1,2,3,4,5,8,9,12,13,14,16,17,19,20,21
Seq#:148; Xaa Pos. 1,2,3,4,5,8,9,12,13,14,16,17,19,20,21
Seq#:149; Xaa Pos. 1,2,3,4,5,8,9,16,19,20,21

VERIFICATION SUMMARY DATE: 01/22/2007
PATENT APPLICATION: **US/10/796,719A** TIME: 12:29:22

Input Set : **A:\pto.kd.txt**
Output Set: **N:\CRF4\01222007\J796719A.raw**

L:881 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:66 after pos.:0
M:341 Repeated in SeqNo=66
L:1587 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:0
M:341 Repeated in SeqNo=119
L:1634 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:0
M:341 Repeated in SeqNo=120
L:1974 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:144 after pos.:0
M:341 Repeated in SeqNo=144
L:2052 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:145 after pos.:0
M:341 Repeated in SeqNo=145
L:2118 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:146 after pos.:0
M:341 Repeated in SeqNo=146
L:2192 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:147 after pos.:0
M:341 Repeated in SeqNo=147
L:2256 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:148 after pos.:0
M:341 Repeated in SeqNo=148
L:2300 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:149 after pos.:0
M:341 Repeated in SeqNo=149

Raw Sequence Listing before editing (for reference only)

IFW16

RAW SEQUENCE LISTING DATE: 01/16/2007
PATENT APPLICATION: **US/10/796,719A** TIME: 12:33:04

Input Set : **A:\14174-043001.txt**
Output Set: **N:\CRF4\01162007\J796719A.raw**

```
 4 <110> APPLICANT: Currie, Mark G.
 5       Mahajan-Miklos, Shalina
 8 <120> TITLE OF INVENTION: METHODS AND COMPOSITIONS FOR THE
 9       TREATMENT OF GASTROINTESTINAL DISORDERS
12 <130> FILE REFERENCE: 14184-043001
14 <140> CURRENT APPLICATION NUMBER: US 10/796,719A
15 <141> CURRENT FILING DATE: 2004-03-09
17 <150> PRIOR APPLICATION NUMBER: US 10/766,735
18 <151> PRIOR FILING DATE: 2004-01-28
20 <150> PRIOR APPLICATION NUMBER: US 60/443,098
21 <151> PRIOR FILING DATE: 2003-01-28
23 <150> PRIOR APPLICATION NUMBER: US 60/471,288
24 <151> PRIOR FILING DATE: 2003-05-15
26 <150> PRIOR APPLICATION NUMBER: US 60/519,460
27 <151> PRIOR FILING DATE: 2003-11-12
29 <160> NUMBER OF SEQ ID NOS: 149
31 <170> SOFTWARE: FastSEQ for Windows Version 4.0
```

Does Not Comply
Corrected Diskette Needed
(pg. 2)

ERRORED SEQUENCES

```
1915 <210> SEQ ID NO: 144
1916 <211> LENGTH: 21
1917 <212> TYPE: PRT
1918 <213> ORGANISM: Artificial Sequence
1920 <220> FEATURE:
1921 <223> OTHER INFORMATION: Synthetically generated peptide
1923 <220> FEATURE:
1924 <221> NAME/KEY: VARIANT
1925 <222> LOCATION: 1, 2, 3, 4, 5
1926 <223> OTHER INFORMATION: Xaa is missing
1928 <220> FEATURE:
1929 <221> NAME/KEY: VARIANT
1930 <222> LOCATION: 8
1931 <223> OTHER INFORMATION: Xaa = Glu
1933 <220> FEATURE:
1934 <221> NAME/KEY: VARIANT
1935 <222> LOCATION: 9
1936 <223> OTHER INFORMATION: Xaa = Leu, Ile, Lys, Arg, Trp, Tyr or Phe
1938 <220> FEATURE:
1939 <221> NAME/KEY: VARIANT
1940 <222> LOCATION: 12
1941 <223> OTHER INFORMATION: Xaa = Asn
```

RAW SEQUENCE LISTING DATE: 01/16/2007
PATENT APPLICATION: US/10/796,719A TIME: 12:33:04

Input Set : A:\14174-043001.txt
Output Set: N:\CRF4\01162007\J796719A.raw

1943 <220> FEATURE:
1944 <221> NAME/KEY: VARIANT
1945 <222> LOCATION: 13
1946 <223> OTHER INFORMATION: Xaa = Pro
1948 <220> FEATURE:
1949 <221> NAME/KEY: VARIANT
1950 <222> LOCATION: 14
1951 <223> OTHER INFORMATION: Xaa = Ala
1953 <220> FEATURE:
1954 <221> NAME/KEY: VARIANT
1955 <222> LOCATION: 16
1956 <223> OTHER INFORMATION: Xaa = Thr, Ala, Lys, Arg, Trp
1958 <220> FEATURE:
1959 <221> NAME/KEY: VARIANT
1960 <222> LOCATION: 17
1961 <223> OTHER INFORMATION: Xaa = Gly
1963 <220> FEATURE:
1964 <221> NAME/KEY: VARIANT
1965 <222> LOCATION: 19
1966 <223> OTHER INFORMATION: Xaa = Tyr or Leu
1968 <220> FEATURE:
1969 <221> NAME/KEY: VARIANT
1970 <222> LOCATION: 20, 21
1971 <223> OTHER INFORMATION: Xaa20 = Asp; Xaa21 = Phe; or missing
1973 <400> SEQUENCE: 144
W--> **1974 Xaa Xaa Xaa Xaa Xaa Cys Cys Xaa Xaa Cys Cys Xaa Xaa Xaa Cys Xaa**
1975 1 5 10 15
E--> **1976 Xaa Cys Xaa Xaa Xaa**

20

VERIFICATION SUMMARY DATE: 01/16/2007
PATENT APPLICATION: **US/10/796,719A** TIME: 12:33:05

Input Set : **A:\14174-043001.txt**
Output Set: **N:\CRF4\01162007\J796719A.raw**

L:881 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:66 after pos.:0
M:341 Repeated in SeqNo=66
L:1587 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:119 after pos.:0
M:341 Repeated in SeqNo=119
L:1634 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:120 after pos.:0
M:341 Repeated in SeqNo=120
L:1974 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:144 after pos.:0
M:341 Repeated in SeqNo=144
L:1976 M:332 E: (32) Invalid/Missing Amino Acid Numbering, SEQ ID:144
L:2052 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:145 after pos.:0
M:341 Repeated in SeqNo=145
L:2118 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:146 after pos.:0
M:341 Repeated in SeqNo=146
L:2192 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:147 after pos.:0
M:341 Repeated in SeqNo=147
L:2256 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:148 after pos.:0
M:341 Repeated in SeqNo=148
L:2300 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:149 after pos.:0
M:341 Repeated in SeqNo=149